1. (ORIGINAL) A hybrid composite flywheel rim comprising: at least two different types of fibers impregnated with a thermosetting resin such as epoxy resin and wound in an annulus on a mandrel, said two different fibers having different elastic moduli; one of said two fiber types being randomly distributed amongst the other fiber macroscopically.

2. (ORIGINAL) The hybrid composite flywheel rim of claim 1, further comprising a plurality of layers, at least one layer of said plurality of layers being composed of at least two different types of fibers impregnated with a thermosetting resin, said two different fibers having different elastic moduli; one of said two fiber types being randomly distributed amongst the other fiber macroscopically in said at least one layer.

3. (ORIGINAL) The hybrid composite flywheel rim of claim 2, wherein at least one of the strength and stiffness of each layer increases in each layer from an innermost layer of the rim to an outermost layer of the rim.

4. (ORIGINAL) The hybrid composite rim of claim 2, wherein the elastic moduli of the two different elastic moduli differ by at least 5 Msi.

5. (ORIGINAL) The hybrid composite flywheel rim of claim 2, wherein at least one layer of said plurality of layers being formed entirely from one of a low modulus fiber and a high modulus fiber, and another layer of said plurality of layers being formed from both the low modulus fiber and the high modulus fiber.

6. (ORIGINAL) A hybrid composite flywheel rim as defined claim 1, wherein the following equations are satisfied:

$$W_L = (N+B/A) * L_R. \text{ and } W_L + L_R < L_M \text{ and } M * L_R = N * S_p$$

and wherein:

N = Maximum integer obtained when W_L is divided by L_R

A = integer larger than B

B = integer smaller than A

$B/A \neq 1, ½, 1/3, ¼$

W_L = Winding Length (inch)

L_R = Lead Rate (inch)

L_M = Distance between inner faces of two mandrel flanges (inch)

M = integer ≥ 2

N = integer ≥ 2

S_P = fiber space amongst other fibers (inch)

7. (ORIGINAL) The hybrid composite flywheel rim of claim 1, wherein said one of said two fiber types is distributed amongst the other fiber in a cross hatch pattern macroscopically.

8. (ORIGINAL) The hybrid composite flywheel rim of claim 7, further comprising a plurality of layers, at least one layer of said plurality of layers being composed of at least two different types of fibers impregnated with a thermosetting resin, said two different fibers having different elastic moduli; one of said two fiber types being randomly distributed amongst the other fiber macroscopically in said at least one layer.

9. (ORIGINAL) The hybrid composite flywheel rim of claim 8, wherein at least one of the strength and stiffness of each layer increases in each layer from an innermost layer of the rim to an outermost layer of the rim.

10. (ORIGINAL) The hybrid composite rim of claim 8, wherein the elastic moduli of the two different elastic moduli differ by at least 5 Msi.

11. (ORIGINAL) The hybrid composite flywheel rim of claim 8, wherein at least one layer of said plurality of layers being formed entirely from one of a low modulus fiber and a high modulus fiber, and another layer of said plurality of layers being formed from both the low modulus fiber and the high modulus fiber.

12. (ORIGINAL) A hybrid composite flywheel rim as defined claim 7, wherein the following equations are satisfied:

$$W_L = (N+B/A) * L_R. \text{ and } W_L + L_R < L_M \text{ and } M * L_R = N * S_p$$

and wherein:

N = Maximum integer obtained when W_L is divided by L_R

A = integer larger than B

B = integer smaller than A

$B/A \neq 1, ½, 1/3, ¼$

W_L = Winding Length (inch)

L_R = Lead Rate (inch)

L_M = Distance between inner faces of two mandrel flanges (inch)

M = integer ≥ 2

N = integer ≥ 2

S_P = fiber space amongst other fibers (inch)

13. (ORIGINAL) A hybrid composite flywheel rim, comprising: fibers having different elastic moduli, said fibers including carbon fiber, glass fiber, said fibers fixed in a matrix of thermosetting resin such as epoxy resin; said carbon fiber is distributed amongst the other fiber in a cross hatch pattern macroscopically.

14. (ORIGINAL) A hybrid composite flywheel rim as defined claim 13, wherein the following equations are satisfied:

$$W_L = (N+B/A) * L_R. \text{ and } W_L + L_R < L_M \text{ and } M * L_R = N * S_p$$

and wherein:

N = Maximum integer obtained when W_L is divided by L_R

A = integer larger than B

B = integer smaller than A

$B/A \neq 1, ½, 1/3, ¼$

W_L = Winding Length (inch)

L_R = Lead Rate (inch)

L_M = Distance between inner faces of two mandrel flanges (inch)

M = integer ≥ 2

N = integer ≥ 2

S_P = fiber space amongst other fibers (inch)

15. (ORIGINAL) The hybrid composite flywheel rim of claim 13, further comprising a plurality of layers, at least one layer of said plurality of layers being composed of said fibers having different elastic moduli and wherein said carbon fiber is randomly distributed amongst the other fiber type macroscopically in said at least one layer.

16. (ORIGINAL) The hybrid composite flywheel rim of claim 15, wherein at least one of the strength and stiffness of each layer increases in each layer from an innermost layer of the rim to an outermost layer of the rim.

17. (ORIGINAL) The hybrid composite rim of claim 15, wherein the elastic moduli of said fibers having different elastic moduli differ by at least 5 Msi.

18. (ORIGINAL) A composite flywheel rim, comprising:

an annular structure having a plurality of zones, each with multiple fiber layers in a resin matrix, each said fiber layer having a mixture of carbon fiber tows and glass fiber tows at a ratio of tows that is constant in each layer of any single zone, and said ratio incrementally increases zone-by-zone radially toward outside zones of said rim; and

wherein said carbon fiber tows lie in a macroscopically uniform distribution in each zone by controlling the correlation between lead rate of the fiber band as it is wound onto the mandrel per mandrel revolution and the winding length.